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SOUND ABSORPTION COEFFICIENTS OF THE
MORE COMMON ACOUSTIC MATERIALS

SEP 6 1947

This letter circular is published primarily for the information and guidance of government agencies in the selection and use of commercially available acoustic materials. To this end, data have been included which show the effects of mounting and of painting on the acoustic properties of the materials. Only tests made at the National Bureau of Standards are included.

CURRENT APPLICABILITY OF TESTS:

Most of the listed sound absorption coefficients were obtained on samples submitted by the manufacturers of the materials. It will be noted that many of the tests were made a number of years ago. However, these older tests are included with the assurance of the manufacturers that the formulation of the materials is substantially the same now as it was when the materials were tested.

APPROVAL OF MATERIALS:

The inclusion of a material is not to be construed as a general approval, or a warrant of the product by this Bureau. Rather, the intent is to show the performance to be expected from a material when it is used or applied in the manner described.

CLASSIFICATION OF ACOUSTIC MATERIALS:

The acoustic materials listed in this letter circular are divided into two groups, 1) acoustic tiles and 2) acoustic materials for plastic application. The classification of the acoustic tiles, as shown in the columns headed "Type" and "Class" is in accordance with Federal Specification SS-A-118 which is now being revised. The scheme for the classification is given on page 6 of this Letter Circular.

SOUND ABSORPTION COEFFICIENTS:

The sound absorption coefficient is defined as the absorbed fraction of the sound energy incident on a material. By custom, the coefficient at 512 cycles per second is most often used in acoustic treatment of auditoriums. The "noise coefficient" is the average, to the nearest multiple of 0.05, of the coefficients for 256, 512, 1024, and 2048 cycles per second. As its name implies, the noise coefficient is used when the problem is one of general noise reduction as in offices, restaurants, hospitals, and the like.

EFFECT OF ABSORBENT AREA:

Sound absorption measurements at this Bureau are made in the reverberation chamber on samples approximately 72 square feet in area. It is well known that sound absorption coefficients depend to a large degree on the size and shape of the sample tested. Owing to diffraction effects, the smaller the dimension of a sample, the greater will be its apparent sound absorbing power. Therefore, for purposes of standardization, the coefficients listed in this letter circular have been extrapolated to what they would be for an infinite area. Consequently, the values given should be re-

garded as approximate only. Slight differences in the coefficients of different materials should be disregarded in favor of other factors such as appearance, fire resistance, light reflectivity, and paintability.

MOUNTING:

The method of mounting should be considered always in appraising an acoustic material. Many of the materials exhibit large differences in their sound absorption coefficients for different types of mounting. As a general rule, the greater the airspace behind a material, the greater will be its sound absorption. The figures given in this letter circular are valid only if the materials are mounted as they were when tested. For this reason, the exact method of mounting is given for each test. A table of the more or less standard mountings used in our laboratory is given on page 7.

ACOUSTIC PLASTERS:

Acoustic plasters require special skills in application because improper manipulation may markedly reduce their coefficients. Consequently, especial care should be exercised in writing specifications for acoustic plasters. Particular attention is called to those tests where the plaster was applied to a dry base coat. Should these particular plasters be applied to a green base, the absorption may be different. Also, the sound absorption coefficients are affected materially by the time between the application of the first and second acoustic plaster coats, the amount of moisture in the plaster surface when it is finally troweled or floated, and other factors of this nature.

PAINTABILITY:

The paintability of an acoustic material is an important factor which determines the useful acoustic life of the material. Perforated and certain fissured tiles offer no particular difficulties as to painting. Non-perforated tiles and most acoustic plasters, on the other hand, require extreme care in their painting as one injudicious application of paint may effectively ruin the acoustic properties of such materials. In order to prolong the acoustic life of an acoustic material, it is strongly recommended that the material be spray painted rather than brush painted. Also, while the paint should be applied to hide the old surface reasonably well, no attempt should be made to bring the surface to the full color or shade of the paint.

FIRE RESISTANCE:

Acoustic materials vary widely as to their combustibility. The fire resistance ratings given in this Letter Circular for the prefabricated acoustic units were obtained by the Bureau's Fire Protection Section. It should be carefully noted that these ratings apply only to the formulation of the product as it was when tested. Sometimes, a relatively slight change in the formulation will shift the fire resistance rating of the product from one fire resistance classification to another. Fire resistance ratings are defined in Federal Specification SS-A-118 and are abbreviated as follows:

- c. Combustible
- s. Slow burning
- r. Fire retardant
- i. Incombustible

SUGGESTIONS FOR USE:

It is not necessarily the case that materials of highest coefficient are the most advantageous. This is particularly true when an auditorium is to be treated acoustically. Usually, when there is room enough to apply the requisite amount, a material of lower coefficient will give equal and oftentimes better results than one of higher absorption, because of the more uniform distribution of the material. However, under certain conditions where localized echoes are to be eliminated, materials of higher coefficient must be used. Pertinent information on the acoustic treatment of rooms, particularly those used for auditoriums, is contained in "Architectural Acoustics", Circular of the National Bureau of Standards, C418. Copies of this circular may be purchased from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. for 5 cents each (stamps not accepted).

Supplementary test data on any of the materials listed in this Letter Circular will be furnished on request.

TRADE NAMES AND MANUFACTURERS OF ACOUSTIC MATERIALS

Trade Name	Manufacturer	Address	Page
Absorb-A-Sound	Luse-Stevenson Company	873 Blackhawk Street, Chicago 22, Illinois	15
Absorb-A-Tone	Luse-Stevenson Company	873 Blackhawk Street, Chicago 22, Illinois	14, 15
Acoustex	National Gypsum Company	Buffalo 2, New York	15
Acousti-Celotex	The Celotex Corporation	120 South LaSalle Street, Chicago 3, Illinois	9, 10
Acoustic Panels	Industrial Sound Control	45 Granby Street, Hartford 5, Connecticut	12
Acoustic Panels	Cincinnati Manufacturing Co.	Gest & Evans Streets, Cincinnati, Ohio	10, 11
Acoustic Plaster	Hollywood Stucco Products, Inc.	5420 Fair Avenue, North Hollywood, California	19
Acoustifelt	National Gypsum Company	Buffalo 2, New York	15
Acoustifiber	National Gypsum Company	Buffalo 2, New York	15
Acoustilite	The Insulite Company	500 Baker Arcade Bldg., Minneapolis 2, Minnesota	13
Acoustimetal-B	National Gypsum Company	Buffalo 2, New York	16
Acoustone	United States Gypsum Company	300 West Adams Street, Chicago, Illinois	17
Air-Acoustic Sheets	Johns-Manville Sales Corporation	22 East 40th Street, New York 16, New York	13
Akoustolith Tile	R. Guastavino Company	660 Main Street, Woburn, Massachusetts	11, 12
Audience (Seated in different type chairs)			25
Auditone	United States Gypsum Company	300 West Adams Street, Chicago, Illinois	17
Balsam Wool	Wood Conversion Company	First National Bank Building, St. Paul, Minnesota	17
Basalt Rock	Basalt Rock Company	8th and River Streets, Napa, California	9
Celocrete Blocks	National Brick Corporation	35-28 Vernon Blvd., Long Island City, New York	15
Cushiontone	Armstrong Cork Company	Lancaster, Pennsylvania	8
Econacoustic	National Gypsum Company	Buffalo 2, New York	16
Felt	Allen Industries, Inc.	Detroit 7, Michigan	8
Felt	American Felt Company	Glenville, Connecticut	8
Felt	The Felters Company	214 South Street, Boston 11, Massachusetts	11
Fiberlite	The Insulite Company	500 Baker Arcade Bldg., Minneapolis 2, Minnesota	13
Fibracoustic	Johns-Manville Sales Corporation	22 East 40th Street, New York 16, New York	13
Fibrespray	Acoustics, Inc.	Commercial Trust Bldg., Philadelphia 2, Pennsylvania	18
Fibretext	Johns-Manville Sales Corporation	22 East 40th Street, New York 16, New York	13
Fibretone	Johns-Manville Sales Corporation	22 East 40th Street, New York 16, New York	13
Hair Felt	Allen Industries, Inc.	Detroit 7, Michigan	8
Hushkote	The Cleveland Gypsum Company	1276 West Third Street, Cleveland, Ohio	19
Kilnoise	The Kelley Island Lime & Transport Co.	Leader Building, Cleveland 14, Ohio	21
Limpet	Kearbey & Mattison Company	Ambler, Pennsylvania	20
Macoustic Plaster	National Gypsum Company	Buffalo 2, New York	21
Mufflestone	The Celotex Corporation	120 South La Salle Street, Chicago 3, Illinois	10
Nashkote	Johns-Manville Sales Corporation	22 East 40th Street, New York 16, New York	13
Old Newark Acoustic Plaster	Newark Plaster Company	50 Church Street, New York 7, New York	21

TRADE NAMES AND MANUFACTURERS OF ACOUSTIC MATERIALS (CONTINUED)

Trade Name	Manufacturer	Address	Page
Perfatone	United States Gypsum Company	300 West Adams Street, Chicago, Illinois	17
Plastacoustic	R. Guastavino Company	660 Main Street, Woburn, Massachusetts	19
Porex	Porete Mfg. Company	Porete Avenue, North Arlington, New Jersey	16
Reverbolite	The Celotex Corporation	120 South La Salle Street, Chicago 3, Illinois	18
Sabinite	United States Gypsum Company	300 West Adams Street, Chicago, Illinois	23
Sanacoustic	Johns-Manville Sales Corporation	22 East 40th Street, New York 16, New York	14
Sound Insulation Blanket	Johns-Manville Sales Corporation	22 East 40th Street, New York 16, New York	14
Spray-Acoustic	Sprayo-Flake Company	2715 Irving Park Road, Chicago 18, Illinois	22
Studio Element	Johns-Manville Sales Corporation	22 East 40th Street, New York 16, New York	14
Tile, Pyramid Form	Hurley Screen Company	96-17 Northern Blvd., Corona, Long Island, New York	12
Transite Acoustical Units	Johns-Manville Sales Corporation	22 East 40th Street, New York 16, New York	14
Travacoustic	National Gypsum Company	Buffalo 2, New York	16
Vermiculite Acoustic Plastic	Vermiculite Research Institute	2540 Eastwood Avenue, Evanston, Illinois	24

TYPES AND CLASSES OF PREFABRICATED ACOUSTIC UNITS

Type I. Cast units having a pitted or granular-appearing surface.

Class A. All-mineral units composed of small granules or finely divided particles with Portland cement binder.

Class B. All-mineral units composed of small granules or finely divided particles with lime or gypsum binder.

Class C. Units composed of small granules or finely divided particles of mineral or vegetable origin with incombustible mineral binder.

Type II. Units having a mechanically perforated surface; the perforations arranged in a regular pattern.

Class A. Units having a perforated facing which acts as a covering and support for the sound absorbent material; the facing material is strong and durable and substantially rigid.

Class B. Units having circular perforations extending into the sound absorbent material.

Class C. Units having slots or grooves extending into the sound absorbent material.

Type III. Units having a fissured surface.

Type IV. Units having a felted fiber surface.

Class A. Units composed of long wood fibers.

Class B. Units composed of fine felted vegetable fibers or wood pulp.

Class C. Units composed of mineral fibers.

TYPES OF MOUNTING

1. Cemented to gypsum wall board. This is considered equivalent to cementing to plaster or masonry.
2. Nailed on 13/16" x 2" furring, 12" o.c., unless otherwise indicated.
3. Metal supports attached to 13/16" x 2" wood furring.
4. Laid directly on laboratory floor.
5. Nailed on 2 x 4's, 12" o.c., unless otherwise indicated.
6. Cemented to the floor of the reverberation chamber (no longer used).
7. Back of sample covered with concrete.
8. Attached to metal suspension system. 4" air space back of tile, unless otherwise indicated.
9. Acoustic tile nailed to 13/16" x 2" furring, 18" o.c., space between furring filled with Rockwool.
10. Nailed on 2 x 8's, 12" o.c., unless otherwise indicated.
11. Laid on 24 gauge sheet iron, nailed to 13/16" x 2" furring, 24" o.c.

Sound Absorption Coefficients and Description of Test Samples

TABLE I

Prefabricated Acoustic Units

ALLEN INDUSTRIES, INC.

Material	Type	Class	Thickness	Mounting see p. 7	Coefficients				Noise Coef.	Unit Size	Weight lb per sq ft	Surface	Fire Resis- tance	Date
					128	256	512	1024	2048	4096				
Hair Felt	-	-	1"	4	.10	.24	.54	.72	.76	.82	.55	-	-	1943
AMERICAN FELT COMPANY														
Felt, Mdse. 3567	-	-	1/8"	4	.02	.04	.06	.12	.28	.44	.10	-	-	1944
Felt, Mdse. 3567	-	-	1/4"	4	.03	.04	.11	.29	.56	.68	.25	-	-	1944
Felt, Mdse. 3567	-	-	1/2"	4	.05	.07	.29	.63	.83	.87	.45	-	-	1944
Felt, Mdse. 3567	-	-	3/4"	4	.04	.17	.62	.82	.86	.83	.60	-	-	1944
1 ply 1/4" above and 1 ply 1/2" above.	-	-	1"	4	.06	.31	.80	.88	.87	.87	.70	-	-	1944
Felt, Mdse. 3567	-	-	1"	4	.06	.31	.80	.88	.87	.87	.70	-	-	1944
2 plies 1/2" above.	-	-	1"	4	.06	.31	.80	.88	.87	.87	.70	-	-	1944

ARMSTRONG CORK COMPANY

Cushiontone, Type A-1	II	B	1/2"	1	.06	.18	.56	.71	.65	.57	.55	12"x12"	.79	Mill painted; perforated 484 holes per sq ft; holes 3/16" diam., 3/8" deep.	c	1941
Cushiontone, Type A-1	II	B	1/2"	2	.07	.46	.59	.67	.74	.68	.60	12"x12"	.79	Mill painted; perforated as above.	c	1941
Cushiontone, Type A-2	II	B	5/8"	1	.08	.19	.63	.82	.74	.81	.60	12"x12"	.91	Mill painted; perforated as above; holes 1/2" deep.	c	1941
Cushiontone, Type A-2	II	B	5/8"	2	.06	.49	.68	.83	.76	.74	.70	12"x12"	.91	Mill painted; perforated as above.	c	1941
Cushiontone, Type A-2	II	B	5/8"	1	.07	.23	.64	.72	.71	.64	.60	12"x12"	-	Mill painted; perforated as above; holes 1/2" deep.	c	1943
Cushiontone	II	B	3/4"	1	.12	.31	.72	.81	.74	.64	.65	12"x12"	1.13	Mill painted; perforated as above; holes 5/8" deep.	c	1946
Cushiontone	II	B	3/4"	2	.12	.68	.66	.78	.72	.66	.70	12"x12"	1.13	Mill painted; perforated as above.	c	1946
Cushiontone, Type A-3	II	B	7/8"	1	.10	.30	.78	.78	.68	.50	.65	12"x12"	1.27	Mill painted; perforated as above; holes 3/4" deep.	c	1942
Cushiontone, Type A-3	II	B	7/8"	1	.10	.38	.78	.86	.72	.65	.70	12"x12"	1.31	Mill painted; perforated as as above.	c	1943
Cushiontone, Type A-3	II	B	7/8"	2	.15	.65	.66	.78	.67	.53	.70	12"x12"	1.27	Mill painted; perforated as above.	c	1942

BASALT ROCK COMPANY

Material	Type	Class	Thick- ness	Mounting see p. 7	Coefficients			Noise Coef.	Unit Size	Weight lb per sq ft	Surface	Fire Resis- tance	Date
					128	256	512	1024	2048	4096			
Basalt Rock, Type A	I	A	5"	4	.32	.81	.75	.73	.74	.73	Unpainted	1	1938

THE CELOTEX CORPORATION

Acousti-Celotex Type C-1	II	B	1 1/2"	1	.12	.26	.48	.50	.46	.56	.45	12"x12"	.78	Mill painted; perforated 441 holes per sq ft; holes 3/16" diam., 3/8" deep.	c	1936
Acousti-Celotex Type C-2	II	B	5/8"	1	.11	.31	.71	.80	.67	.57	.60	12"x12"	.88	Mill painted; perforated as above; holes 1/2" deep.	c	1936
Acousti-Celotex Type C-2	II	B	5/8"	2	.14	.65	.63	.73	.67	.55	.65	12"x12"	.88	Same as above.	c	1936
Acousti-Celotex Type C-3	II	B	1 3/16"	1	.10	.30	.78	.85	.59	.42	.65	12"x12"	.94	Mill painted; perforated as above; holes 5/8" deep.	c	1939
Acousti-Celotex Type C-3	II	B	1 3/16"	1	.08	.33	.83	.86	.53	.37	.65	12"x12"	-	Same as above, except brush painted 4 coats NES.	c	1939
Acousti-Celotex Type C-3	II	B	1 3/16"	2	.17	.66	.75	.78	.54	.41	.70	12"x12"	1.11	Mill painted; perforated as above; holes 1 1/16" deep.	c	1943
Acousti-Celotex Type C-3	II	B	1 3/16"	8	.55	.66	.66	.80	.69	.52	.70	12"x24"	1.09	Mill painted; perforated as above; holes 5/8" deep.	c	1936
Acousti-Celotex Type C-4	II	B	1 1/4"	1	.17	.48	.97	.72	.50	.41	.65	12"x12"	1.58	Mill painted; perforated as above; holes 1 1/16" deep.	c	1936
Acousti-Celotex Type C-4	II	B	1 1/4"	2	.22	.74	.90	.72	.49	.42	.70	12"x12"	1.52	Mill painted; perforated as above; holes 1 1/8" deep.	c	1943
Acousti-Celotex Type C-4	II	B	1 1/4"	8	.53	.68	.96	.78	.60	.50	.75	12"x24"	1.44	Mill painted; perforated as above; holes 1 1/16" deep.	c	1936
Acousti-Celotex Type C-6	II	B	1 1/4"	4	.12	.41	.90	.92	.66	.64	.70	12"x12"	1.44	Unpainted; perforated as above; holes 1/4" diam., 1" deep.	c	1932
Acousti-Celotex Type C-8	II	B	1"	2	.20	.62	.66	.75	.73	.48	.70	24"x48"	1.44	Mill painted; perforated 462 holes per sq ft; holes 3/16" diam., 7/8" deep.	c	1940
Acousti-Celotex Type C-9	II	B	3/4"	1	.11	.32	.74	.81	.54	.45	.60	12"x12"	1.06	Mill painted; perforated 441 holes per sq ft; holes 3/16" diam., 1 1/16" deep.	c	1941

THE CELOTEX CORPORATION (CONTINUED)

Material	Type	Class	Thick- ness	Mounting See p. 7	Coefficients					Noise Coef.	Unit Size	Weight lb per sq ft	Surface	Fire Resis- tance	Date
					128	256	512	1024	2048	4096					
Acousti-Celotex Type C-9	II	B	3/4"	2	.14	.62	.72	.76	.58	.48	12"x12"	1.06	Mill painted; perforated 441 holes per sq ft; holes 3/16" diam., 11/16" deep.	c	1941
Acousti-Celotex Type C-9	II	B	3/4"	8	.43	.66	.73	.77	.62	.48	12"x24"	1.00	Mill painted; perforated as above.	c	1941
Acousti-Celotex Type M-1	II	B	9/16"	1	.11	.29	.68	.74	.82	.74	12"x12"	1.23	Mill painted; perforated 676 holes per sq ft; holes 5/32" diam., 1/2" deep.	-	1936
Acousti-Celotex Type M-2	II	B	1"	8	.38	.54	.66	.95	.73	.68	12"x24"	2.32	Mill painted; perforated as above, holes 7/8" deep.	-	1939
Muffletone, Standard Finish.	I	B	1"	1	.15	.46	.75	.80	.72	.68	12"x12"	1.84	Unpainted.	1	1938
Muffletone, Standard Finish.	I	B	1"	1	.13	.44	.78	.80	.75	.82	12"x12"	-	Same as above, except spray painted 3 coats at NBS.	1	1938
Muffletone, Fissured Finish.	III	-	1"	1	.14	.41	.82	.77	.75	.78	12"x12"	1.94	Unpainted.	1	1942

CINCINNATI MANUFACTURING COMPANY

Acoustic Panels, per- forated metal on each face, filled with 4 lb density Fiberglas.	II	A	3 1/2" bulged at center to 4"	4	.50	.98	.99	.92	.82	.80	.95	24"x60" nominal, actual ab- sorbing area = 22"x58".	-	Facings perforated 4608 holes per sq ft., holes 0.075" diam., facings ex- tended 1" beyond enclosure containing Fiberglas.	-	1944
Acoustic Panels, sim- ilar to above except filled with 6 lb density Fiberglas.	II	A	3 1/2"	4	.51	.99	.99	.96	.85	.82	.95	As above.	-	Similar to above.	-	1944
Acoustic Panels, same as next above.	II	A	3 1/2"	10 (laid on 2 x 8's)	.69	.98	.94	.94	.88	.83	.95	As above.	-	Same as above.	-	1944

CINCINNATI MANUFACTURING COMPANY (CONTINUED)

Material	Type	Class	Thick- ness	Mounting See p. 7	Coefficients					Noise Coef.	Unit Size	Weight lb per sq ft	Surface	Fire Resis- tance	Date
					128	256	512	1024	2048						
Acoustic Panels, sim- ilar to above except filled with 8 lb density Fiberglas	II	A	3 1/2" bulged at centers to 5"	4	.52	.99	.99	.98	.92	.86	As above	-	Similar to above.	-	1944
Acoustic Panels, sim- ilar to above except filled with 4 lb den- sity Fiberglas, edges boxed in with non-perforated sheet metal.	II	A	3 1/2"	4	.50	.99	.99	.88	.82	.74	24"x60" nominal, actual absorb- ing area = 22"x58"	-	Similar to above, 1" non-perforated metal flange around periphery of panels.	-	1944

THE FELTERS COMPANY

Felt	-	-	1"	4	.11	.40	.50	.84	.78	.98	.70	.96	No surface covering.	-	1938
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R. GUASTAVINO COMPANY

Akoustolith Tile Grade B-1	I	A	1 1/4"	5 (12" o.c not nailed)	.41	.83	.78	.72	.78	.82	.80	6"x12"	Unpainted	1	1936
Akoustolith Tile Grade B-2	I	A	1"	4	.09	.17	.46	.77	.77	.58	.55	6"x12"	Unpainted	1	1932
Akoustolith Tile Grade B-2	I	A	1 1/2"	4	.14	.30	.67	.87	.82	.57	.65	6"x12"	Unpainted	1	1932
Akoustolith Tile Grade B-2	I	A	2"	4	.21	.50	.85	.81	.70	.70	.70	6"x12"	Unpainted	1	1932
Akoustolith Tile Grade C	I	A	1 1/2"	4	.12	.19	.44	.61	.66	.56	.50	6"x12"	Unpainted	1	1930
Akoustolith Tile Grade C	I	A	2"	4	.19	.26	.53	.64	.70	.56	.55	6"x12"	Unpainted	1	1930
Akoustolith Tile Grade C	I	A	4"	10 (not nailed)	.54	.70	.78	.85	.88	.81	.80	12"x12"	Unpainted	1	1937

R. GUASTAVINO COMPANY (CONTINUED)

Material	Type	Class	Thickness	Mounting See p. 7	Coefficients						Noise Coef.	Unit Size	Weight lb per sq ft	Surface	Fire Resis- tance	Date
					128	256	512	1024	2048	4096						
Akoustolith Tile Grade C	I	A	4"	4	.32	.82	.90	.77	.79	.81	.80	12"x12"	19.5	Unpainted	1	1937
Akoustolith Tile Grade C	I	A	5"	4	.43	.92	.91	.88	.86	.74	.90	12"x12"	24.4	Unpainted	1	1937
Akoustolith Tile Grade C	I	A	5"	10 (not nailed)	.60	.80	.95	.91	.90	.78	.90	12"x12"	24.4	Unpainted	1	1937
Akoustolith Tile Grade C	I	A	5"	5 (not nailed)	.67	.80	.96	.93	.80	.87	.85	12"x12"	24.4	Unpainted	1	1937
Akoustolith Tile Grade D	I	A	1"	4	.08	.13	.25	.54	.67	.42	.40	-	-	Unpainted	1	1930
Akoustolith Tile Grade D	I	A	2"	4	.15	.26	.59	.74	.52	.50	.55	-	-	Unpainted	1	1930
Akoustolith Tile Grade D	I	A	4"	10 (not nailed)	.54	.80	.70	.88	.87	.74	.80	12"x12"	18.8	Unpainted	1	1937
Akoustolith Tile Grade D	I	A	4"	4	.27	.76	.93	.78	.74	.69	.80	12"x12"	18.8	Unpainted	1	1937
Akoustolith Tile Number 104	I	A	4"	4	.40	.75	.80	.80	.75	.82	.80	18"x40"	21.2	Unpainted	1	1940

HURLEY SCREEN COMPANY

Tile, Pyramid Form	-	-	2 3/8" (over all)	1	.08	.65	.38	.43	.50	.54	.50	12"x12" at base.	.64	Exposed horizontal surfaces painted, edges unpainted.	c	1943
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INDUSTRIAL SOUND CONTROL

Acoustic Panels, ex- posed face perfora- ted sheet metal, backing non-perfor- ated sheet metal.	II	A	3 1/2"	4	.38	.87	.93	.86	.84	.85	.90	36"x48" nominal, actual absorb- ing area = 34"x46"	-	Facings perforated 4608' holes per sq ft, holes 0.075" diam. Facing ex- tends 1" beyond en- closure containing absorbent material (absorbent material unknown).	1	1944
Acoustic Panels, similar to above, filled with 5.4 lb density mineral wool.	II	A	3 1/2"	4	.60	.97	.97	.93	.91	.78	.95	As above	4.65	Similar to above.	1	1945

THE INSULITE COMPANY

Material	Type	Class	Thick- ness	Mounting See p. 7	Coefficients						Noise Coef.	Unit Size	Weight lb per sq ft	Surface	Fire Resis- tance	Date
					128	256	512	1024	2048	4096						
Acoustilite	IV	B	3/4"	1	.16	.34	.79	.72	.69	.64	.65	12"x12"	.59	Mill painted.	c	1939
Acoustilite	IV	B	3/4"	2	.12	.49	.80	.85	.80	.83	.75	12"x12"	.57	Mill painted.	c	1940
Acoustilite	IV	B	3/4"	2	.11	.53	.82	.82	.72	.68	.70	12"x12"	+	Spray painted 2 coats at NBS.	c	1940
Acoustilite	IV	B	3/4"	2	.19	.73	.67	.55	.39	.32	.60	12"x12"	-	Spray painted 4 coats at NBS.	c	1940
Fiberlite	IV	B	1/2"	1	.07	.20	.53	.77	.74	.74	.55	12"x12"	.41	Mill painted.	c	1939
Fiberlite	IV	B	1/2"	2	.07	.40	.72	.75	.80	.78	.65	12"x12"	.44	Mill painted.	c	1940

JOHNS-MANVILLE SALES CORPORATION

Air-Acoustic Sheets	IV	B	1/2"	11	.14	.45	.53	.70	.67	.70	.60	18"x24"	.80	Unpainted.	r	1938
Air-Acoustic Sheets	IV	B	1"	11	.31	.55	.70	.74	.76	.76	.70	18"x24"	1.51	Unpainted.	r	1938
Fibraoustic	IV	B	1"	1	.17	.45	.79	.73	.74	.73	.70	12"x12"	.54	Mill painted.	c	1942
Fibraoustic	IV	B	1"	2	.17	.77	.74	.71	.71	.81	.75	12"x12"	.54	Mill painted.	c	1942
Fibrestone	II	B	13/16"	1	.13	.44	.66	.70	.68	.67	.60	12"x12"	1.12	Mill painted; perforated 441 holes per sq ft; holes 3/16" diam., 5/8" deep.	c	1943
Fibrestone	II	B	13/16"	2	.19	.71	.58	.69	.69	.66	.65	12"x12"	1.12	Same as above.	c	1943
Fibretext	II	C	13/16"	1	.12	.35	.67	.74	.80	.63	.65	12"x12"	1.03	Mill painted; slotted at 1" intervals in 2 perpendic- ular directions; slots 3/32" wide, 5/8" deep.	c	1943
Fibretext	II	C	13/16"	2	.14	.64	.57	.72	.83	.69	.70	12"x12"	1.03	Same as above.	c	1943
Nashkote A	-	-	3/4"	1	.09	.16	.27	.30	.23	.23	.25	36"x48"	-	Painted 2 coats oil paint.	-	1929
Nashkote A	-	-	3/4"	1	.11	.21	.51	.68	.71	.68	.55	36"x48"	-	Same as above, except mem- brane perforated with fine holes after painting.	-	1929
Nashkote A	-	-	1"	1	.12	.20	.33	.33	.28	.28	.30	36"x48"	-	Painted 2 coats oil paint.	-	1929
Nashkote A	-	-	1"	1	.13	.26	.58	.73	.77	.71	.60	36"x48"	-	Same as above except mem- brane perforated with fine holes after painting.	-	1929

JOHNS-MANVILLE SALES CORPORATION (CONTINUED)

Material	Type	Class	Thick- ness	Mounting See p. 7	Coefficients						Noise Coef.	Unit Size	Weight lb per sq ft	Surface	Fire Resis- tance	Date
					128	256	512	1024	2048	4096						
Sanacoustic, Rock- wool pad plus Metal facing & pad sup- ports, plus furring =	II	A		3	.18	.58	.96	.91	.82	.74	.80	12"x24"	Pad 1.2	Perforated enameled metal surface, 4608 holes per sq ft., .068" diameter.	1	1940
Sanacoustic, same as above except every other tile was not perforated and con- tained no pad.	II	A	1 5/8" 2 1/2" As above.	3	.15	.86	.66	.66	.49	.44	.65	12"x24"	Pad 1.2	Enameled metal surface. Perforated pans had 4608 holes per sq ft., .068" diameter.	1	1940
Sanacoustic, pad plus metal facing and pad supports,	II	A		8	.43	.94	.77	.82	.78	.72	.85	12"x24"	Pad 1.2	Perforated enameled metal surface, 4608 holes per sq ft., .068" diameter.	1	1940
Sanacoustic, same as above, except every other tile was not perforated and con- tained no pad.	II	A	1 5/8" 5 1/4" As above.	8	.54	.72	.57	.62	.50	.43	.60	12"x24"	Pad 1.2	Enameled metal surface. Perforated pans had 4608 holes per sq ft., .068" diameter.	1	1940
Sound Isolation Blanket (Rockwool)	-	-	-	4	.11	.58	.85	.83	.81	.83	.75	-	1.5	Metal lath.	-	1932
Studio Element.	-	-	1"	4	.16	.54	.72	.74	.71	.81	.70	22"x36"	1.47	No covering.	-	1937
Transite Acoustical Units.	II	A	1 1/8"	4	.19	.39	.77	.74	.70	.55	.65	12"x12"	3.0	Transite, perforated 576 holes per sq ft; holes 5/32" diam.	1	1931

LUSE STEVENSON COMPANY

Absorb-A-Tone	IV	A	1"	10	.40	.91	.82	.80	.78	.86	.85	12"x24"	2.2	Unpainted	r	1940
Absorb-A-Tone	IV	A	1"	2	.10	.31	.71	.93	.78	.84	.70	12"x24"	2.4	Unpainted	r	1941
Absorb-A-Tone	IV	A	1"	8 (4 3/4" airspace back of tile)	.22	.74	.84	.64	.73	.80	.75	18"x18"	2.25	Unpainted	r	1943

LUSE STEVENSON COMPANY (CONTINUED)

Material	Type	Class	Thickness	Mounting See p. 7	Coefficients						Noise Coef.	Unit Size	Weight lb per sq ft	Surface	Fire Resis- tance	Date
					128	256	512	1024	2048	4096						
Absorb-A-Tone, 3" layer rock wool batts behind tile.	IV	A	1"	8	.58	.98	.90	.77	.79	.87	.85	18"x18"	2.25 tile, 1.01 batts.	Unpainted.	r	1943
Absorb-A-Tone	IV	A	1"	1	.08	.24	.55	.78	.78	.74	.60	18"x18"	2.25	Unpainted.	r	1943
Absorb-A-Sound	IV	A	2"	4	.12	.30	.75	.70	.66	.78	.60	36"x36"	4.81	Unpainted.	-	1945
Absorb-A-Sound	IV	A	2"	4	.04	.24	.54	.88	.53	.70	.55	18"x36"	4.90	Unpainted.	-	1945

NATIONAL BRICK CORPORATION

Celocrete Blocks.	I	A	5 3/4"	4	.62	.84	.46	.37	.59	.49	.55	7 5/8" x 15 5/8"	23.4	Unpainted, joints not sealed.	i	1945
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NATIONAL GYPSUM COMPANY

Acoustex, Type 40R	IV	A	3/4"	1	.06	.17	.37	.68	.82	.74	.50	12"x12"	1.75	Unpainted.	r	1938
Acoustex, Type 40R	IV	A	3/4"	2	.15	.22	.61	.93	.79	.69	.65	12"x12"	1.54	Unpainted	r	1938
Acoustifelt, Gold Bond Type MK under facing of 3/16" Gold Bond Perforated Asbestos Board, facing nailed to furring, blanket be- tween 1 3/16" x 2" furring.	II	A	1 1/2" (blanket)	4	.09	.20	.62	.89	.78	.54	.60	Facing 12"x12" blanket 10" wide.	.81 (blanket)	Perforated 529 holes per sq ft; holes 3/16" diam.	i	1944
Acoustifelt, as above, except 1" thick blan- ket between 1 1/4" x 2" furring.	II	A	1"	4	.11	.52	.76	.84	.77	.58	.70	As above.	1.49 (blanket)	As above.	i	1944
Acoustifelt, as above, except 1 1/2" thick blanket between 1 3/4" x 2" furring.	II	A	1 1/2" (blanket)	4	.23	.66	.78	.84	.79	.60	.75	As above.	2.14 (blanket)	As above.	i	1944
Acoustifiber.	II	B	5/8"	1	.16	.40	.72	.71	.69	.69	.65	12"x12"	.68	Mill painted; per- forated 441 holes per sq ft; holes 1/8" diam., 1/4" deep.	-	1944

NATIONAL GYPSUM COMPANY (CONTINUED)

Material	Type	Class	Thickness	Mounting See p. 7	Coefficients				Noise Coef.	Unit Size	Weight lb per sq ft	Surface	Fire Resis- tance	Date
					128	256	512	1024	2048	4096				
Acoustimetal-B, perforated metal on each face and filled with 4 lb density glass mineral wool.	II	A	3 1/2"	4	.46	.94	.98	.89	.83	.79	4.44	Enameled metal surface; perforated 4608 holes per sq ft; holes .068" diam.	1	1942
Acoustimetal-B, perforated metal on each face and filled with 6 lb density glass mineral wool.	II	A	3 1/2"	4	.49	.99	.98	.91	.86	.78	5.25	Same as above.	1	1942
Acoustimetal-B, perforated metal on each face and filled with 4 lb density glass mineral wool. Heavily contaminated by oil and dust.	II	A	3 1/2"	4	.53	.98	.97	.83	.78	.69	-	Galvanized iron surface; perforated 4608 holes per sq ft; holes 0.071" diam. Perforations partially closed by accumulated oil and dust.	1	1944
Econacoustic.	IV	B	1 1/2"	1	.09	.21	.66	.73	.72	.86	0.48	Unpainted.	c	1940
Econacoustic.	IV	B	1 1/2"	2	.08	.45	.67	.62	.66	.78	0.48	Unpainted.	c	1940
Econacoustic.	IV	B	1"	1	.14	.51	.78	.78	.78	.82	0.71	Unpainted.	c	1939
Econacoustic.	IV	B	1"	1	.19	.43	.78	.74	.75	.80	-	Same as above, except spray painted 3 coats.	c	1939
Econacoustic.	IV	B	1"	1	.18	.50	.79	.74	.71	.67	-	Same as above, except spray painted 7 coats.	c	1939
Econacoustic.	IV	B	1"	1	.24	.44	.66	.63	.69	.77	.88	Mill painted.	c	1946
Econacoustic.	IV	B	1"	1	.21	.43	.65	.62	.67	.65	.88	Painted 1 coat Albi-R Paint, 1 1/4 sq ft per gal.	s	1946
Travacoustic.	I	B	1"	1	.11	.44	.82	.83	.77	.77	2.04	Unpainted.	1	1940
FORETE MFG. CO.														
Porex.	IV	A	1 1/2"	4	.10	.19	.40	.79	.50	.77	.45	20"x40"	3.81	1944
												Unpainted.	r	1944

UNITED STATES GYPSUM COMPANY

Material	Type	Class	Thick- ness	Mounting See p. 7	Coefficients						Noise Coef.	Unit Size	Weight lb per sq ft	Surface	Fire Resis- tance	Date
					128	256	512	1024	2048	4096						
Acoustone, Type F	III	-	11/16"	1	.07	.22	.75	.92	.82	.81	.70	12"x12"	1.13	Mill painted.	i	1940
Acoustone, Type F	III	-	13/16"	1	.14	.31	.86	.87	.78	.77	.70	12"x12"	1.33	Mill painted.	i	1940
Acoustone, Type F	III	-	15/16"	1	.20	.48	.92	.87	.84	.78	.80	12"x12"	1.54	Mill painted.	i	1940
Acoustone, Type F	III	-	13/16"	8	.34	.75	.71	.72	.79	.77	.75	12"x12"	1.31	Mill painted.	i	1940
Auditone "B"	II	C	1"	2	.19	.64	.63	.72	.78	.70	.70	12"x24"	1.18	Mill painted, perforated 41 slots 1/8" x 3 9/16" per sq ft., slots 7/8" deep.	c	1943
Auditone "B"	II	C	1"	2	.22	.62	.61	.70	.78	.63	.70	12"x24"	-	Same as above, except brush painted 5 coats oil paint at NBS.	c	1943
Auditone "B"	II	C	1"	2	.18	.63	.59	.70	.78	.58	.70	12"x24"	-	Same as above, except brush painted total of 10 coats oil paint at NBS.	c	1943
Auditone "B"	II	C	1"	1	.24	.50	.73	.82	.75	.64	.70	12"x12"	1.14	Mill painted, perforated as above.	c	1945
Auditone "C"	II	C	3/4"	1	.08	.30	.66	.80	.86	.75	.65	12"x12"	.79	Mill painted, perforated as above, except slots 5/8" deep.	c	1946
Auditone "C"	II	C	3/4"	1	.08	.30	.70	.81	.84	.70	.65	12"x12"	.79	Same as above, except spray painted 1 coat Albi-R paint, 144 sq ft per gal.	s	1946
Perfatone, Rockwool pad, plus metal supports, plus furring "	II	A	1 5/8"	8	.48	.79	.80	.90	.87	.71	.85	12"x24"	.93 (Pad)	Perforated enameled metal, 4608 holes per sq ft, .073" diameter.	i	1939

WOOD CONVERSION COMPANY

Balsam Wool	-	-	1"	4	.18	.36	.55	.65	.67	-	.55	-	.29	Scrim facing.	c	1928
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Table II.

Acoustic Materials for Plastic Application

Unless otherwise noted, each sample of acoustic plaster was mixed in accordance with specifications furnished by the manufacturers and applied on a false ceiling at the National Bureau of Standards by a skilled plasterer. The sprayed materials were applied at NBS except where noted. All panels were laid on the floor of the reverberation chamber for the tests.

ACOUSTICS, INC.

Material	Thickness	Coefficients							Noise Coef.	Application	Surface Treatment	Date
		128	256	512	1024	2048	4096					
"Fibrespray" Asbestos	1/2"	.47	.92	.82	.83	.90	.90	.85	Sprayed on metal lath; 3 3/4" airspace back of lath.	Unpainted; surface tended to fluff on drying; rolled just before testing.	1943	
"Fibrespray" Asbestos	3/4"	.36	.32	.84	.91	.91	.90	.75	Sprayed on 3/8" plaster board; 3 3/4" airspace back of plaster board.	As above.	1943	
"Fibrespray" Asbestos	3/4"	.45	.31	.87	.89	.87	.87	.75	As above.	As above, except spray painted 2 coats emulsion paint at NBS.	1943	
"Fibrespray" Asbestos	5/8"	.65	.74	.74	.78	.87	.90	.80	Applied on metal lath; 3 1/2" airspace back of lath; not made at NBS.	Unpainted.	1944	
(For heavy duty) "Fibrespray" Asbestos	3/4"	.32	.37	.80	.87	.82	.95	.70	Applied on 3/8" plaster board; 3 1/2" airspace back of plaster board; not made at NBS.	Unpainted.	1944	
(For heavy duty)												

THE CELOTEX CORPORATION

Material	Thick- ness	Coefficients						Noise Coef.	No. of Coats.	Base Coat	Application	Surface Treatment	Date
		128	256	512	1024	2048	4096						
Reverbolite (Regular)	1/2"	.19	.29	.51	.70	.69	.78	.55	1st coat 1/4" 2nd coat 1/4"	3/4" gypsum plaster on metal lath.	1st coat applied on dry base coat. 2nd coat applied as soon as first coat had set.	Finished with steel trowel.	1938
Reverbolite (Pumice Aggregate)	1/2"	.18	.29	.41	.51	.55	.65	.45	1st coat 1/4" 2nd coat 1/4"	3/4" gypsum plaster on metal lath.	1st coat applied on dry base coat. 2nd coat applied 24 hours after 1st coat.	Brushed with rice root brush then finished with steel trowel.	1938

CLEVELAND GYPSUM SUPPLY COMPANY

Material	Thick- ness	Coefficients					Noise Coef.	No. of Coats.	Base Coat	Application	Surface Treatment	Date
		128	256	512	1024	2048						
Hushkote Acoustic Plaster.	1/2"	.13	.24	.45	.71	.56	.49	1st coat 1/4" 2nd coat 1/4"	3/4" gypsum plaster on metal lath.	1st coat applied to dry base coat. 2nd coat applied 24 hours after 1st coat.	Finished with steel trowel.	1935
Hushkote Acoustic Plaster.	5/8"	.16	.34	.50	.53	.43	.37	1st coat 3/8" 2nd coat 1/4"	3/4" gypsum plaster on metal lath.	1st coat applied to dry base coat. 2nd coat applied 24 hours after 1st coat.	Finished with steel trowel.	1937

R. GUASTAVINO COMPANY

Material	Thick- ness	Coefficients					Noise Coef.	No. of Coats.	Base Coat	Application	Surface Treatment	Date
		128	256	512	1024	2048						
Plastacoustic	1/2"	.17	.22	.44	.81	.72	.72	1st coat 1/4" 2nd coat 1/4"	3/4" gypsum plaster.	1st coat applied to dry base coat. 2nd coat applied 24 hours after 1st coat.	Finished with steel trowel.	1941

HOLLYWOOD STUCCO PRODUCTS, INC.

Material	Thick- ness	Coefficients					Noise Coef.	No. of Coats.	Base Coat	Application	Surface Treatment	Date
		128	256	512	1024	2048						
Acoustic Plaster	1/2"	.10	.22	.42	.78	.78	.70	1st coat 1/4" 2nd coat 1/4"	3/4" gypsum plaster on metal lath.	1st coat applied to dry base coat. 2nd coat applied 24 hours after 1st coat.	Finished with cork float.	1939

KEASBEY AND MATTISON COMPANY

Material	Thickness	Coefficients							Noise Coef.	Application	Surface Treatment	Date
		128	256	512	1024	2048	4096					
Sprayed "Limpet" Asbestos	3/8"	.36	.92	.85	.81	.87	.91	.85	Sprayed on metal lath; 5 7/8" airspace back of lath.	Finished with roller; unpainted.	1942	
Sprayed "Limpet" Asbestos	3/8"	.43	.91	.82	.67	.62	.61	.75	Same as above.	Same as above, except spray painted 5 coats at NBS.	1942	
Sprayed "Limpet" Asbestos	1/2"	.25	.78	.97	.81	.82	.85	.85	Same as above.	Finished with roller; unpainted.	1941	
Sprayed "Limpet" Asbestos	1/2"	.27	.75	.90	.75	.80	.88	.80	Same as above.	Same as above, except spray painted 2 coats at NBS.	1941	
Sprayed "Limpet" Asbestos	5/8"	.32	.28	.50	.84	.85	.87	.60	Sprayed on gypsum wall board nailed on 2 x 4's, 16" on centers.	Finished with roller; unpainted.	1942	
Sprayed "Limpet" Asbestos	5/8"	.38	.26	.67	.77	.72	.61	.60	Same as above.	Same as above, except spray painted 5 coats at NBS.	1942	
Sprayed "Limpet" Asbestos	5/8"	.53	.91	.87	.88	.95	.96	.90	Sprayed on metal lath; 3 1/2" airspace back of lath; not made at NBS.	Unpainted	1944	
Sprayed "Limpet" Asbestos	3/4"	.41	.88	.90	.88	.91	.81	.90	Sprayed on metal lath; 5 7/8" airspace back of lath.	Finished with roller; unpainted.	1941	
Sprayed "Limpet" Asbestos	3/4"	.49	.90	.93	.86	.81	.82	.90	Same as above.	Same as above, except spray painted 2 coats at NBS.	1941	
Sprayed "Limpet" Asbestos	3/4"	.48	.91	.91	.86	.87	.87	.90	Same as above.	Same as above, except spray painted 10 coats at NBS.	1941	
Sprayed "Limpet" Asbestos	3/4"	.08	.19	.70	.89	.95	.85	.70	Sprayed on gypsum wall board.	Finished with roller; unpainted	1941	
Sprayed "Limpet" Asbestos	3/4"	.09	.23	.67	.90	.93	.87	.70	Same as above.	Same as above, except spray painted 2 coats at NBS.	1941	
Sprayed "Limpet" Asbestos	1"	.30	.42	.74	.96	.95	.96	.75	Sprayed on 3/8" gypsum wall board; 3 1/2" airspace back of wall board; not made at NBS.	Unpainted.	1944	
Sprayed "Limpet" Asbestos	1 1/2"	.16	.59	.98	.98	.97	.90	.90	Sprayed on gypsum wall board.	Finished with roller; unpainted.	1941	
Sprayed "Limpet" Asbestos	1 1/2"	.16	.62	.94	.98	.94	.91	.85	Same as above.	Same as above, except spray painted 2 coats at NBS.	1941	

KELLEY ISLAND LIME & TRANSPORT COMPANY

Material	Thick- ness	Coefficients							Noise Coef.	No. of Coats.	Base Coat	Application	Surface Treatment	Date
		128	256	512	1024	2048	4096							
Kilnoise "A"	1/4"	.24	.18	.23	.48	.69	.67	.40	1	Scratch coat on metal lath.	Applied to dry scratch coat.	Brush textured immediately after application. Nail stippled 24 hours after application.	1945	
Kilnoise "A"	1/2"	.22	.37	.59	.62	.48	.38	.50	1	As above.	As above.	As above.	1945	
Kilnoise "A"	1/2"	.33	.33	.59	.74	.69	.72	.60	1	As above.	As above.	As above.	1945	
Kilnoise "B"	1/2"	.30	.25	.25	.21	.18	.27	.20	1	1/4" scratch coat on 3/8" plaster board, 3 5/8" airspace back of plaster board.	Applied to dry scratch coat.	Brush textured immediately after application.	1944	
Kilnoise "B"	1/2"	.30	.32	.70	.78	.54	.44	.60	1	As above.	As above.	Same as above, except nail stippled 24 hours after application.	1944	

NATIONAL GYPSUM COMPANY

Material	Thick- ness	Coefficients						Noise Coef.	No. of Coats.	Base Coat	Application	Surface Treatment	Date
		128	256	512	1024	2048	4096						
Macoustic Plaster	1/2"	.21	.24	.42	.76	.82	.76	.55	1st coat 1/4" 2nd coat 1/4"	3/4" total scratch and brown coats on metal lath.	1st coat applied to dry base coat. 2nd coat applied 24 hours after 1st coat.	Sand finished.	1945
Macoustic Plaster	1/2"	.23	.25	.50	.76	.79	.80	.60	Same as above.	Same as above.	Same as above.	Steel troweled.	1945

NEWARK PLASTER COMPANY

Old Newark Acoustic Plaster	1/2"	.09	.23	.47	.77	.71	.75	.55	1st coat 1/4" 2nd coat 1/4"	3/4" gypsum plaster on metal lath.	1st coat applied to dry base coat. 2nd coat applied 24 hours after 1st coat.	Steel troweled.	1937
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SPRAY-O-FLAKE COMPANY

Material	Thickness	Coefficients						Noise Coef.	Application	Surface Treatment	Date
		128	256	512	1024	2048	4096				
Spray-Acoustic	1/2"	.47	.88	.87	.95	.95	.92	.90	Sprayed on metal lath; 3 5/8" airspace back of lath.	Unpainted	1945
Spray-Acoustic Type X	5/8"	.59	.87	.85	.88	.94	.83	.90	Sprayed on metal lath; 3 5/8" airspace back of material.	Finished with a roller; surface sprayed with coat of binder.	1940
Spray-Acoustic Type X	5/8"	.65	.79	.80	.70	.83	.60	.80	Same as above.	Same as above, except brush painted 4 coats at NBS.	1940
Spray-Acoustic	3/4"	.30	.37	.71	.93	.98	.87	.75	Sprayed on 5/8" gypsum plaster base on metal lath; 3 1/2" airspace back of lath; not made at NBS.	Unpainted	1944
Spray-Acoustic	3/4"	.30	.29	.59	.84	.92	.95	.65	Sprayed on 3/8" gypsum wall board 3 1/2" airspace back of wall board; not made at NBS.	Unpainted	1944
Spray-Acoustic	3/4"	.30	.32	.63	.89	.95	.91	.70	Sprayed on 3/8" plaster board; 3 5/8" airspace back of plaster board.	Unpainted	1945
Spray-Acoustic Type X	1" 1 1/8"	.34 .18	.43 .52	.74 .95	.94 .93	.93 .91	.94 .87	.75 .85	Same as above. Sprayed on gypsum wall board.	Unpainted Finished with a roller; surface sprayed with coat of binder.	1945 1940
Spray-Acoustic Type X	1 1/8"	.15	.47	.88	.92	.87	.88	.80	Same as above.	Same as above, except painted 3 coats at NBS.	1940

UNITED STATES GYPSUM COMPANY

Material	Thick- ness	Coefficients							Noise Coef.	No. of Coats.	Base Coat	Application	Surface Treatment	Date
		128	256	512	1024	2048	4096							
Sabinite Plaster F	1/2"	.19	.22	.43	.80	.75	.75	.55	1st coat 1/4" 2nd coat 1/4"	3/4" total scratch and brown coats on metal lath. As above.	1st coat applied to dry base coat; 2nd coat applied 48 hours after 1st coat.	Floated with cork float.	1936	
Sabinite "M" Machine mixed.	1/2"	.21	.26	.52	.75	.80	.78	.60	As above.	As above.	1st coat applied to barely dry base coat. 2nd coat applied 24 hours after 1st coat.	Steel-troweled 45 min- utes after 2nd coat.	1946	
Sabinite "M"	1/2"	.13	.24	.44	.74	.85	.77	.55	As above.	As above.	1st coat applied to dry base coat. 2nd coat applied 24 hours after 1st coat.	Steel-troweled.	1945	
Sabinite "M"	1/2"	.15	.31	.37	.40	.33	.27	.35	As above.	As above.	Same as above.	As above, except brush painted 3 coats resin emulsion paint, average application 470 sq ft per gal of paste per coat.	1945	
NOTE: The test results on this plaster after brush painting are presented merely to show the adverse effect of improper painting methods on acoustic plasters. Compare the results with the following for a similar sample before and after it was properly spray painted.														
Sabinite "M"	1/2"	.18	.27	.49	.78	.87	.85	.60	As above.	As above.	1st coat applied to dry base coat. 2nd coat applied 24 hours after 1st coat. Same as above.	Steel-troweled.	1946	
Sabinite "M"	1/2"	.29	.36	.52	.65	.55	.49	.50	As above.	As above.	Same as above.	As above, except spray painted 5 coats resin emulsion paint, average application 545 sq ft per gal paste per coat.	1946	

NOTE: The test results on this plaster after brush painting are presented merely to show the adverse effect of improper painting methods on acoustic plasters. Compare the results with the following for a similar sample before and after it was properly spray painted.

VERMICULITE RESEARCH INSTITUTE

Material	Thick- ness	Coefficients						Noise Coef.	No. of Coats.	Base Coat	Application	Surface Treatment	Date
		128	256	512	1024	2048	4096						
Vermiculite Acoustic Plastic, Type B.	1/2"	.31	.34	.52	.78	.83	.95	.60	1st coat 1/4" 2nd coat 1/4"	3/4" total scratch and brown coat on metal lath. Same as above.	1st coat applied to dry base coat. 2nd coat applied 24 hours after 1st coat. Same as above.	Darbled with smooth sanded wooden darby.	1944
Vermiculite Acoustic Plastic, Type B.	1/2"	.31	.32	.52	.81	.88	.84	.65	Same as above.	Same as above.	Same as above.	Same as above, but spray painted 2 coats casein paint.	1944
Vermiculite Acoustic Plastic, Type B.	1/2"	.30	.37	.59	.84	.74	.65	.65	Same as above.	Same as above.	Same as above.	Same as above, but spray painted 4 coats casein paint.	1945
Vermiculite Acoustic Plastic, Type B.	1/2"	.28	.28	.44	.74	.89	.76	.60	Same as above.	1/4" brown coat, 1/4" scratch coat on 3/8" plas- ter board. Same as above.	Same as above.	Darbled with smooth sanded wooden darby.	1944
Vermiculite Acoustic Plastic, Type B.	1/2"	.30	.26	.42	.75	.93	.88	.60	Same as above.	Same as above.	Same as above.	Same as above, except after 6 months dry- ing.	1945

Table 3

Absorption per person for an audience seated in
chairs of various types.

*Seating		128	256	512	1024	2048	Date
A	Women without coats	0.7	1.3	2.3	3.6	4.6	1930
A	Women with coats	1.3	2.4	4.0	5.8	6.7	1930
A	Men without overcoats	1.3	2.1	4.1	5.5	7.4	1930
A	Men with overcoats	2.3	3.2	4.8	6.2	7.6	1930
B	Mixed audience	-	-	3.9	4.7	-	1929
B	Empty seat	-	3.4	3.0	3.3	3.6	1929
C	Mixed audience	-	3.5	4.1	4.9	4.2	1930
C	Empty seat	-	3.0	2.5	2.9	3.1	1929
	Mixed audience	-	2.7	3.3	3.8	3.6	1930
D	Plywood chair	-	0.2	0.3	0.5	0.5	1930

The above absorption figures are numerically equal to the number of square feet of a material having an absorption coefficient of 1.00, which would absorb the same amount of sound energy.

- *A cane seat chairs, open back.
- *B theatre chairs, box spring seat, heavily padded back.
- *C same as B, but single layer of padding on back.
- *D church pews, seating five.

